

***King County CSI Project
Juanita Bay Pump Station***

Alternative	Total Direct Project Cost	Total Estimated Capital Cost
1 - New Pump Station on Existing Site	\$8,772,000	\$11,882,000
1 - Temporary Pump Station on Existing Site	\$3,887,000	\$5,297,000
Total	\$12,659,000	\$17,179,000
2A - New Pump Station on Adjacent Site	\$10,897,000	\$15,338,500
2B - New Pump Station on Remote Site	\$13,867,000	\$19,420,000

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King County CSI Project
Juanita Bay Pump Station - Construction Cost Estimate for Alternative 1
New Pump Station on Existing Site

	Units	Cost / Unit	Quantity	Estimated Cost
Division 2				
Earthwork	LS	\$200,000	1	\$200,000
Stabilization of Existing Caisson -Tiebacks	LS	\$80,000	1	\$80,000
Landscaping, Topsoil, and Irrigation System	LS	\$80,000	1	\$80,000
Soil Erosion and Sediment Control	LS	\$25,000	1	\$25,000
Driven Steel Sheet Piling	SF	\$45	8,800	\$396,000
18" Forcemain w/ Surface Restoration	LF	\$160	130	\$20,800
24" Forcemain w/ Surface Restoration	LF	\$220	120	\$26,400
Forcemain Fittings	EA	\$2,500	8	\$20,000
Flowmeter Vault	LS	\$16,000	1	\$16,000
48" Bore and Jack/Microtunnel	LF	\$1,600	95	\$152,000
Division 3				
Concrete: Drywell Walls	CY	\$600	400	\$240,000
Concrete: Tremie Seal/Wetwell Plug	CY	\$250	340	\$85,000
Concrete: Slabs on Grade	CY	\$300	60	\$18,000
Concrete: Walls	CY	\$480	230	\$110,400
Concrete: Suspended Slabs	CY	\$550	200	\$110,000
Division 5				
Structural Aluminum	LS	\$25,000	1	\$25,000
Floor Hatches	EA	\$2,500	4	\$10,000
Alum Stairs, Railings	LS	\$65,000	1	\$65,000
Division 6				
RTP Grating, Railings, and Stairs	LS	\$55,000	1	\$55,000
Division 8				
Doors and Windows	LS	\$24,000	1	\$24,000
Division 9				
Painting and Protective Coatings	LS	\$65,000	1	\$65,000
Division 10				
Louvers and Vents	LS	\$25,000	1	\$25,000
Identification, Stenciling, and Tagging Systems	LS	\$5,000	1	\$5,000
Signage	LS	\$4,000	1	\$4,000
Lavatory Equipment	LS	\$1,200	1	\$1,200
Fire System	LS	\$35,000	1	\$35,000
Division 11				
Equipment: Non-Clog Centrifugal	EA	\$95,000	4	\$380,000
Equipment: Sump Pump	EA	\$12,000	2	\$24,000
Engine Generators: Diesel	EA	\$125,000	1	\$125,000
Fuel Tank and ATGS	LS	\$18,000	1	\$18,000
Seal Water System	LS	\$20,000	1	\$20,000
IA Compressor System	LS	\$11,000	1	\$11,000
48"x48" Sluice Gate w/ Operator	EA	\$38,000	1	\$38,000
Chemical Metering Pump and Appurtenances	EA	\$9,500	2	\$19,000
Chemical Storage Tanks	EA	\$4,500	3	\$13,500
Division 13				
Plastic Liner Plate	SF	\$20	3,200	\$64,000
Noise Attenuators and Silencers	EA	\$9,000	4	\$36,000
Hoisting Equipment	LS	\$45,000	1	\$45,000

Division 15

Mechanical Pipe and Pipe Fittings	LS	\$350,000	1	\$350,000
Pipe: 16" Steel	LF	\$140	240	\$33,600
Pipe Support Systems	LS	\$10,000	1	\$10,000
Check Valve 16", Slow Closing	EA	\$14,500	4	\$58,000
Gate Valves 24" w/ Operator	EA	\$16,000	4	\$64,000
Gate Valves 16" w/ Operator	EA	\$7,800	4	\$31,200
Plug Valves 16" w/ Operator	EA	\$12,000	8	\$96,000
Surge Control and Air Release Valving	LS	\$35,000	1	\$35,000
Flowmeters	EA	\$25,000	2	\$50,000
Wetwell HVAC Equipment	LS	\$55,000	1	\$55,000
Drywell HVAC Equipment	LS	\$40,000	1	\$40,000

Miscellaneous

Superstructure: Roof, lighting, duct, finishes, etc.	SF	\$250	2,300	\$575,000
SUBTOTAL				\$4,085,100

Division 16 & 17

Electrical and Controls @	20%			\$817,000
SUBTOTAL				\$4,902,100
Contingency @	30%			\$1,471,000
SUBTOTAL				\$6,373,100
Mobilization @	5.0%			\$319,000
General Conditions @	8.8%			\$561,000
Bonds and Insurance @	3.0%			\$191,000
SUBTOTAL				\$7,444,000
Overhead and Profit @	8.5%			\$633,000
Estimated Direct Construction Cost				\$8,077,000
Sales Tax @	8.6%			\$695,000

Total Estimated Construction Cost \$8,772,000

Allied Costs	35%			\$3,070,000
Easements	SF	\$5	8,000	\$40,000

Total Estimated Project Cost \$11,882,000

Net Present Worth of Operation and Maintenance Costs				\$1,835,000
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Estimated Direct Construction Cost \$13,717,000

King County CSI Project
Juanita Bay Pump Station - Construction Cost Estimate for Alternative 1
Temporary Pump Station and Demolition

	Units	Cost / Unit	Quantity	Estimated Cost
Division 2				
Traffic Control	LS	\$30,000	1	\$30,000
Demolition of Existing Pump Station	LS	\$50,000	1	\$50,000
Earthwork	LS	\$100,000	1	\$100,000
Soil Erosion and Sediment Control	LS	\$15,000	1	\$15,000
18" Forcemain w/ Surface Restoration	LF	\$160	40	\$6,400
24" Forcemain w/ Surface Restoration	LF	\$220	40	\$8,800
Forcemain Fitting	EA	\$2,500	8	\$20,000
Flowmeter Vault	LS	\$16,000	1	\$16,000
Manhole - 35 feet deep	LS	\$25,000	1	\$25,000
Trench Shoring	LS	\$125,000	1	\$125,000
Division 3				
Concrete: Caisson	CY	\$600	140	\$84,000
Concrete: Tremie Seal/Wetwell Plug	CY	\$250	120	\$30,000
Concrete: Slabs on Grade	CY	\$300	50	\$15,000
Concrete: Walls	CY	\$480	60	\$28,800
Concrete: Suspended Slabs	CY	\$550	50	\$27,500
Division 5				
Miscellaneous Metals	LS	\$10,000	1	\$10,000
Floor Hatches	EA	\$2,500	4	\$10,000
Division 9				
Painting and Protective Coatings	LS	\$5,000	1	\$5,000
Division 10				
Identification, Stenciling, and Tagging Systems	LS	\$2,000	1	\$2,000
Division 11				
Equipment: Wet Pit Submersibles	EA	\$150,000	3	\$450,000
Engine Generators: Mobile Diesel	EA	\$150,000	1	\$150,000
48"x48" Sluice Gate w/ Operator	EA	\$38,000	1	\$38,000
Division 15				
Mechanical Pipe and Pipe Fittings	LS	\$250,000	1	\$250,000
Pipe: 16" Steel	LF	\$140	240	\$33,600
Pipe Support Systems	LS	\$10,000	1	\$10,000
Check Valve 16", Slow Closing	EA	\$14,500	4	\$58,000
Gate Valves 16" w/ Operator	EA	\$7,800	4	\$31,200
Plug Valves 16" w/ Operator	EA	\$12,000	8	\$96,000
Surge Control and Air Release Valving	LS	\$35,000	1	\$35,000
Flowmeters	EA	\$25,000	2	\$50,000
SUBTOTAL				\$1,810,300
Division 16 & 17				
Electrical and Controls @	20%			\$362,000
SUBTOTAL				\$2,172,300
Contingency @	30%			\$652,000
SUBTOTAL				\$2,824,300
Mobilization @	5.0%			\$141,000
General Conditions @	8.8%			\$249,000
Bonds and Insurance @	3.0%			\$85,000
SUBTOTAL				\$3,299,000

Overhead and Profit @	8.5%			\$280,000
<i>Estimated Direct Construction Cost</i>				<i>\$3,579,000</i>
Sales Tax @	8.6%			\$308,000
<i>Total Estimated Construction Cost</i>				<i>\$3,887,000</i>
Allied Costs	35%			\$1,360,000
Easements	SF	\$5	10,000	\$50,000
<i>Total Estimated Capital Cost</i>				<i>\$5,297,000</i>

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King County CSI Project
Juanita Bay Pump Station - Construction Cost Estimate for Alternative 2A
New Pump Station on Site at 93rd Avenue NE and Juanita Drive

	Units	Cost / Unit	Quantity	Estimated Cost
Division 2				
Traffic Control	LS	\$30,000	1	\$30,000
Demolition of Existing Pump Station	LS	\$50,000	1	\$50,000
Landscaping, Topsoil, and Irrigation System	LS	\$80,000	1	\$80,000
Earthwork	LS	\$300,000	1	\$300,000
Soil Erosion and Sediment Control	LS	\$25,000	1	\$25,000
Site Paving	LS	\$80,000	1	\$80,000
18" Forcemain w/ Surface Restoration	LF	\$160	120	\$19,200
24" Forcemain w/ Surface Restoration	LF	\$220	120	\$26,400
Forcemain Fittings	EA	\$2,500	6	\$15,000
Microtunnel Access Shaft	LS	\$250,000	1	\$250,000
48" Microtunnel	LF	\$1,800	120	\$216,000
Division 3				
Concrete: Caisson	CY	\$600	1,000	\$600,000
Concrete: Tremie Seal/Wetwell Plug	CY	\$250	900	\$225,000
Concrete: Slabs on Grade	CY	\$300	100	\$30,000
Concrete: Walls	CY	\$480	400	\$192,000
Concrete: Suspended Slabs	CY	\$550	250	\$137,500
Division 5				
Structural Aluminum	LS	\$25,000	1	\$25,000
Floor Hatches	EA	\$2,500	4	\$10,000
Alum Stairs, Railings	LS	\$65,000	1	\$65,000
Division 6				
RTP Grating, Railings, and Stairs	LS	\$55,000	1	\$55,000
Division 8				
Doors and Windows	LS	\$24,000	1	\$24,000
Division 9				
Painting and Protective Coatings	LS	\$65,000	1	\$65,000
Division 10				
Louvers and Vents	LS	\$25,000	1	\$25,000
Identification, Stenciling, and Tagging Systems	LS	\$5,000	1	\$5,000
Signage	LS	\$4,000	1	\$4,000
Lavatory Equipment	LS	\$1,200	1	\$1,200
Fire System	LS	\$35,000	1	\$35,000
Division 11				
Equipment: Non-Clog Centrifugal	EA	\$95,000	4	\$380,000
Equipment: Sump Pump	EA	\$12,000	2	\$24,000
Engine Generators: Diesel	EA	\$125,000	1	\$125,000
Fuel Tank and ATGS	LS	\$18,000	1	\$18,000
Seal Water System	LS	\$20,000	1	\$20,000
IA Compressor System	LS	\$11,000	1	\$11,000
48"x48" Sluice Gate w/ Operator	EA	\$38,000	1	\$38,000
Chemical Metering Pump and Appurtenances	EA	\$9,500	2	\$19,000
Chemical Storage Tanks	EA	\$4,500	3	\$13,500
Division 13				
Plastic Liner Plate	SF	\$20	3,200	\$64,000
Noise Attenuators and Silencers	EA	\$9,000	4	\$36,000

Hoisting Equipment	LS	\$45,000	1	\$45,000
Division 15				
Miscellaneous Pipe and Pipe Fittings	LS	\$350,000	1	\$350,000
Pipe: 16" Steel	LF	\$140	320	\$44,800
Pipe: 24" Steel	LF	\$250	90	\$22,500
Pipe Support Systems	LS	\$10,000	1	\$10,000
Check Valve 16", Slow Closing	EA	\$14,500	4	\$58,000
Gate Valves 24" w/ Operator	EA	\$16,000	4	\$64,000
Gate Valves 16" w/ Operator	EA	\$7,800	4	\$31,200
Plug Valves 16" w/ Operator	EA	\$12,000	8	\$96,000
Seal Water System	LS	\$12,000	1	\$12,000
C1 Water System	LS	\$3,000	1	\$3,000
Surge Control and Air Release Valving	LS	\$35,000	1	\$35,000
Flowmeters	EA	\$25,000	2	\$50,000
Wetwell HVAC Equipment	LS	\$55,000	1	\$55,000
Drywell HVAC Equipment	LS	\$40,000	1	\$40,000
18" Pig Launch	LS	\$30,000	1	\$30,000
24" Pig Launch	LS	\$40,000	1	\$40,000
Miscellaneous				
Superstructure: Roof, lighting, duct, finishes, etc.	SF	\$250	3,000	\$750,000
SUBTOTAL				\$5,075,300
Division 16 & 17				
Electrical and Controls @	20%			\$1,015,000
SUBTOTAL				\$6,090,300
Contingency @	30%			\$1,827,000
Estimated Direct Construction Cost				\$7,917,300
Mobilization @	5.0%			\$396,000
General Conditions @	8.8%			\$697,000
Bonds and Insurance @	3.0%			\$238,000
Total Estimated Project Cost				\$9,248,000
Overhead and Profit @	8.5%			\$786,000
Estimated Direct Construction Cost				\$10,034,000
Sales Tax @	8.6%			\$863,000
Total Estimated Construction Cost				\$10,897,000
Allied Costs	35%			\$3,814,000
Easements	SF	\$5	500	\$2,500
Land Acquisition	SF	\$25	25,000	\$625,000
Total Estimated Project Cost				\$15,338,500
Net Present Worth of Operation and Maintenance Costs				\$1,835,000
Total Estimated Net Present Worth Cost				\$17,173,500

King County CSI Project
Juanita Bay Pump Station - Construction Cost Estimate for Alternative 2B
New Pump Station at 97th Avenue NE and Juanita Drive

	Units	Cost / Unit	Quantity	Estimated Cost
Division 2				
Traffic Control	LS	\$30,000	1	\$30,000
Demolition of Existing Pump Station	LS	\$50,000	1	\$50,000
Landscaping, Topsoil, and Irrigation System	LS	\$80,000	1	\$80,000
Earthwork	LS	\$300,000	1	\$300,000
Soil Erosion and Sediment Control	LS	\$25,000	1	\$25,000
Site Paving	LS	\$80,000	1	\$80,000
18" Forcemain w/ Surface Restoration	LF	\$160	120	\$19,200
24" Forcemain w/ Surface Restoration	LF	\$220	120	\$26,400
Forcemain Fittings	EA	\$2,500	6	\$15,000
Microtunnel Access Shaft	LS	\$150,000	2	\$300,000
48" Microtunnel	LF	\$1,100	1,300	\$1,430,000
Division 3				
Concrete: Caisson	CY	\$600	1,200	\$720,000
Concrete: Tremie Seal/Wetwell Plug	CY	\$250	900	\$225,000
Concrete: Slabs on Grade	CY	\$300	100	\$30,000
Concrete: Walls	CY	\$480	400	\$192,000
Concrete: Suspended Slabs	CY	\$550	250	\$137,500
Division 5				
Structural Aluminum	LS	\$25,000	1	\$25,000
Floor Hatches	EA	\$2,500	4	\$10,000
Alum Stairs, Railings	LS	\$65,000	1	\$65,000
Division 6				
RTP Grating, Railings, and Stairs	LS	\$55,000	1	\$55,000
Division 8				
Doors and Windows	LS	\$24,000	1	\$24,000
Division 9				
Painting and Protective Coatings	LS	\$65,000	1	\$65,000
Division 10				
Louvers and Vents	LS	\$25,000	1	\$25,000
Identification, Stenciling, and Tagging Systems	LS	\$5,000	1	\$5,000
Signage	LS	\$4,000	1	\$4,000
Lavatory Equipment	LS	\$1,200	1	\$1,200
Fire System	LS	\$35,000	1	\$35,000
Division 11				
Equipment: Non-Clog Centrifugal	EA	\$95,000	4	\$380,000
Equipment: Sump Pump	EA	\$12,000	2	\$24,000
Engine Generators: Diesel	EA	\$125,000	1	\$125,000
Fuel Tank and ATGS	LS	\$18,000	1	\$18,000
Seal Water System	LS	\$20,000	1	\$20,000
IA Compressor System	LS	\$11,000	1	\$11,000
48"x48" Sluice Gate w/ Operator	EA	\$38,000	1	\$38,000
Chemical Metering Pump and Appurtenances	EA	\$9,500	2	\$19,000
Chemical Storage Tanks	EA	\$4,500	3	\$13,500
Division 13				
Plastic Liner Plate	SF	\$20	3,200	\$64,000
Noise Attenuators and Silencers	EA	\$9,000	4	\$36,000

Hoisting Equipment	LS	\$45,000	1	\$45,000
Division 15				
Miscellaneous Pipe and Pipe Fittings	LS	\$350,000	1	\$350,000
Pipe: 16" Steel	LF	\$140	320	\$44,800
Pipe: 24" Steel	LF	\$250	90	\$22,500
Pipe Support Systems	LS	\$10,000	1	\$10,000
Check Valve 16", Slow Closing	EA	\$14,500	4	\$58,000
Gate Valves 24" w/ Operator	EA	\$16,000	4	\$64,000
Gate Valves 16" w/ Operator	EA	\$7,800	4	\$31,200
Plug Valves 16" w/ Operator	EA	\$12,000	8	\$96,000
Seal Water System	LS	\$12,000	1	\$12,000
C1 Water System	LS	\$3,000	1	\$3,000
Surge Control and Air Release Valving	LS	\$35,000	1	\$35,000
Flowmeters	EA	\$25,000	2	\$50,000
Wetwell HVAC Equipment	LS	\$55,000	1	\$55,000
Drywell HVAC Equipment	LS	\$40,000	1	\$40,000
18" Pig Launch	LS	\$30,000	1	\$30,000
24" Pig Launch	LS	\$40,000	1	\$40,000
Miscellaneous				
Superstructure: Roof, lighting, duct, finishes, etc.	SF	\$250	3,000	\$750,000
SUBTOTAL				\$6,459,300
Division 16 & 17				
Electrical and Controls @	20%			\$1,292,000
SUBTOTAL				\$7,751,300
Contingency @	30%			\$2,325,000
Estimated Direct Construction Cost				\$10,076,300
Mobilization @	5.0%			\$504,000
General Conditions @	8.8%			\$887,000
Bonds and Insurance @	3.0%			\$302,000
Total Estimated Project Cost				\$11,769,000
Overhead and Profit @	8.5%			\$1,000,000
Estimated Direct Construction Cost				\$12,769,000
Sales Tax @	8.6%			\$1,098,000
Total Estimated Construction Cost				\$13,867,000
Allied Costs	35%			\$4,853,000
Easements	SF	\$5	15,000	\$75,000
Land Acquisition	SF	\$25	25,000	\$625,000
Total Estimated Project Cost				\$19,420,000
Net Present Worth of Operation and Maintenance Costs				\$1,835,000
Total Estimated Net Present Worth Cost				\$21,255,000